GIL'MAN, L.A., prof.; FRIDMAN, Ya.L., dotsent; KISELEVA, M.M., dotsent

State of health in children with multiple dental caries. Stomatologiia
39 no.6:16-20 N-D '60.

1. Iz kafedry pediatrii (zav. - prof. L.A.Gil'man) i kafedry
terapevticheskoy stomatologii (zav. - dotsent Ya.L.Fridman)
Khar'kovskogo meditminskogo stomatologicheskogo instituta
(dir. - dotsent G.S.Voronyanskiy).
(TEETH\_DISEASES) (CHILDREN\_\_CARE AND HYGIENE)

GIL'MAN, L.A., prof.; KISKLEVA, M.M.

CONTRACTOR AND ADDRESS OF THE PROPERTY OF THE

Content of calcium, phosphorus and protein fractions in the blood serum of children with multiple dental caries. Stomatologiia 42 no.4215-17 J1-Ag 63 (MIRA 17:44)

1. Is kafedry pediatrii ( sav. - prof. L.A. Gil'man) i kafedry terapevticheskoy stomatologii ( sav. - dotsent Ya.L.Fridman) Khar'kovskogo meditsinskogo stomatologicheskogo instituta.

1.11507

S/181/63/005/001/033/064 B102/B186

AUTHORS:

Oksman, Ya. A., Kiseleva, M. N., and Martinson, B. M.

TITLE:

Drift dispersion in the photodielectric effect in alloyed germanium

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 220 - 223

TEXT: Carrier drift dispersion was studied with a gold-doped p-type Geplate insulated from the plates of the photodielectric capacitor by teflon films. Photoconduction was excited by blackbody radiation (300°C) or by the light of an incandescent lamp. The light ( $\lambda$ 1.8 - 9 $\mu$ ) was interrupted with a 400-cps frequency. The capacitor was connected in parallel with the oscillatory circuit. This method allows of studying the field effects exerted on volume processes. From measurements of the dark resistance it was found that the signal voltage  $u_8 \sim u\Delta\Sigma$ , where u is the h-f circuit voltage and  $\Delta\Sigma$  is the increase in active conductivity of the crystal. The nonlinearity of  $u_8(u)$  indicates the field effect on  $\Delta\Sigma$ . In the case of lon long-wave excitation the  $u_8(u)$  curves obtained at different frequencies (3.6, 10, 19.6 Mc) are similar in their course; they all show a tendency Card 1/3

S/181/63/005/001/033/064 B102/B186

Drift dispersion ...

to saturation. With short-wave excitation the curves differ greatly: At 3.6 Mc u depends very little on u and is very weak. At 10 Mc us has a peak at about u = 5v, then it drops to the 3.6-Mc curve. At 19.6 Mc us rises to a broad and high maximum at about 15v and drops also to the 3.6-Mc curve. This common approach occurs at ~40v. These curves were obtained for a polished and etched specimen. If the specimen surface was ground the relations were similar but the maxima were lower and broader and the us-values approached each other already at 20 v. The difference between long-wave and short-wave excitation is explained by assuming the latter to generate minority carriers and to cause their drift. This field-induced counterflow of oppositely charged carriers depends in its effects greatly on the period of the voltage applied. If the period is long enough the carriers can accumulate near the crystal surfaces, thus raise the recombination rate and attenuate photoconductivity. From the position of the minima of the us(u) curves, where the time of carrier flight, d/E/4 equals the half-period of the h-f-field, the mobility  $\mu$  can be calculated. For 10 Mc one obtains  $5:10.3 \, \text{cm}^2 \text{v·sec}$ . There are 3 figures.

Gard 2/3

Drift dispersion ...

S/181/63/005/001/033/064
B102/B186

ASSOCIATION:
Cosudarstvennyy opticheskiy institut im. S. I. Vavilova,
Leningrad (State Optical Institute imeni S. I. Vavilov,
Leningrad)

SUBMITTED:
July 30, 1962

BORSKAYA, Ye.A.; KOBZEVA, Z.A.; KISELEVA, Masa

New rod fastenings. Avt.prom. 29 no.3:46 Mr '63. (MIRA 16:3)

1. Nauchno-issledovatel'skiy tekhnologicheskiy institut avtomobil'noy promyshlennosti. (Fastenings)

KISELEVA . M. S

49-4-21/23

AUTHORS: B. S. Neporent, V. F. Belov, O. D. Dmitriyevskiy, G. A. Zaytsev, V. G. Kastrov, M. S. Kiseleva, L. A. Kudryavtseva and I. V. Patalakhin.

Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral TITLE: method. (Opyt pryamogo izmereniya vysotnogo raspredeleniya vlazhnosti atmosfery spektral'nym metodom).

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1947, No.4, pp. 552-555 (USSR).

ABSTRACT: Some recent American communications (Refs. 5-7) refer to investigating the spectrum of the Sun in the infrared range during flights in the upper layers of the atmosphere, in which observation of absorption bands of water vapours. are mentioned and views are expressed on the possible concentrations of these vapours. In this paper the results are described of the first attempts to determine directly the content of water vapour in the atmosphere by means of specially designed spectral apparatus. The operation of the instrument was described in detail by Neporent, B.S. et alii (Ref.8); it consists of a step-wise vacuum monochromator with a diffraction lattice of 300 lines/mm

Card 1/4 of the size 50 x 70 mm which subdivides the infrared range

49-4-21/23 Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral method.

> into five sections (1.24, 1.40, 1.50, 1.88, 2.2  $\mu$ ), the wave-lengths 1.40 and 1.88 belong to the absorption bands of water vapour; utilisation of two bands is provided for extending the range of the measured water concentrations. The wave-lengths 1.24, 1.50 and 2.2µ fall between individual bands and serve for determining the initial intensities in the bands 1.40 and 1.88 µ by means of interpolation. The linear dispersion of the instrument equals 100 a/mm; the entry and exit slots are 1.5 mm wide. Illumination of the input slot is effected by means of a source with a circular emanating surface fitted with a dispersion plate of magnesium oxide. Experiments carried out at ground level showed that, in the operating range of the spectrum, the role of radiation scattered by the sky is insignificant. The measured radiation is modulated with a frequency of 850 c.p.s. using as a receiver of the radiation a cooled PbS photo resistance. After amplification, the signals are transmitted by radio to the ground. In addition to the basic signals transmitted in the operating position of the diffraction lattice (which

Card 2/4 is turned by means of a cam), calibrating signals are

### **APPROVED FOR RELEASE: 09/17/2001** CIA-RDP86-00513R900722810018-2

Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral method.

transmitted and also signals from the pressure gauge, etc. The respective switching is effected by means of a commutator which is coupled with the cam for scanning of the spectrum. The full cycle of the instrument is 2.5 secs and, therefore, the slow changes of the location of the scattering plate of the light source relative to the Sun's rays caused by random oscillations of the instrument during free flight should not affect the results of determination of the relative intensities of the adjacent parts of the spectrum. The results are plotted in graphs. Fig.1 shows the calibration curve obtained on the basis of the exponential law; Fig. 2 shows the graduation curve obtained on the basis of the square root; Fig. 3 shows a part of the absorption band of water vapour (1.44) measured on the spectrometer with altitude scanning, whereby the spectral width of the slot is shown at the bottom part Fig.4 shows the dependence of the of this Figure. absorption function A on the altitude (up to 17 km) for the band 1.44; Fig. 5 shows the dependence of the quantity of water precipitating along the vertical on the height reached by the instrument; Fig. 6 shows the dependence of

Card 3/4

507/51-6-6-16/34

Kiseleva, M.S., Neporent, B.S. and Fursenkov, V.A. 24(7), 3(7) AUTHORS:

Spectral Determination of the Humidity of Air in the Upper Layers of the Atmosphere (Spektral'noye opredeleniye vlazhnosti vozdukha v TITLE: verkhnikh sloyakh atmosfery)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 801-803 (USSR)

Diffraction-grating spectrometers were used to determine humidity of air at various heights of the atmosphere from attenuation of solar radiation in the regions of absorption by water at 1.4, 1.9 and 2.6 µ. The spectral regions around 1.2, 1.5 and 2.2 µ were used for control purposes. The various wavelengths were presented successively to the spectrometer slit by means of a device which uses a cam. The optical signal was modulated at 100 c/s and photoresistors of PbS were used as receivers (they were supplied by S.P. Tibilov and I.G. Kopilevich). The instrument used is shown schematically in Fig 1 where D is a matt aluminized plate used as the source. The instrument was calibrated by means of a special cell in which the optical path could be varied from 8 to 100 m, pressure of water vapour from 0.9 to 10 mm Hg and pressure of nitrogen which imitated atmosphere, from 50 to 500 mm Hg. A calibration curve for the 1.4 µ region is shown in Fig 2; it gives the

Card 1/2

ABSTRACT:

CIA-RDP86-00513R000722810018-2"

**APPROVED FOR RELEASE: 09/17/2001** 

Spectral Determination of the Humidity of Air in the Upper Layers of the Atmosphere

reduced absorption as a function of the square root of the amount of The instrument was made as light as possible and was sent up in a balloon from Central Aerological Laboratories near Khar'kov and Moscow. After reaching its maximum height and drifting for a while, the balloon released the spectrometer and the latter fell to the ground attached to a parachute. From the absorption spectrograms obtained at various heights the amount of water vapour in the atmosphere was calculated and it is given in Fig 3. Humidity of air could be measured at heights up to 11 km using the band at 1.4 µ; for higher heights the stronger bands at 1.9 and 2.6 µ were used. Curves I, II and III in Fig 3 give the amount of water vapour as a function of height determined from measurements carried out in 1957, 1956 and 1955 respectively. The 1957 data for heights of 11-14 km (curve I) are not regarded as reliable. Acknowledgments are made to G.I. Golyshev, V.G. Kastrov, A.S. Masenkis and I.V. Patalakhin for their help. There are 3 figures and 13 references, 8 of which are English, 3 Soviet and 2 German.

Card 2/2

3/169/61/000/007/058/104 28405 A006/A101

10-1100

3,5100

AUTHORS:

Vasilevskiy, K.P., Kiseleva, M.S., Neporent, B.S. Study of the law of infrared radiation absorption by water vapors and determination of the moisture in the upper atmospheric layers

TITLE:

Referativnyy zhurnal. Geofizika, no. 7, 1961, 34, abstract 78219 by the spectral method

PERIODICAL:

("Dokl. Mezhvuz. nauchn. konferentsii po spektroskopii i spektr. analizu", Tomsk, Tomskiy un-t, 1960, 82 - 84)

The authors investigated the method of determining water vapor con-

The authors investigated the method of determining water vapor conscient; centration from absorption lines in the infrared spectrum range.

The described method is applicable to wantows and also the the atmosphere. method is applicable to various gas systems and also to the atmosphere. The half width of individual lines in the intrared spectrum range. The description method is applicable to various gas systems and also to the atmosphere. method is applicable to various gas systems and also to the atmosphere. The half width of individual lines of rotary-oscillation H<sub>2</sub>O bands under conditions corresponding to the lower atmospheric layers. corresponding to the lower atmospheric layers, is of the order of 0.03 - 0.1 cm; therefore in the majority of cases measurements in the channel of hands of water therefore in the majority of cases measurements in the absorption bands of water vapors are performed under conditions of unresolved structure of bands and at a vapors are performed under conditions of unresolved structure of bands and at a slit width of the Spectral devices exceeding considerably the width of individual the spectral devices exceeding considerably the width of the spectral devices exceeding the spectral devices exceeding considerably the width of the spectral devices exceeding the Under such conditions the Bouguer-Beer law is not applicable and the

al lines. Card 1/4

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722810018-2

20405 5/169/61/000/007/058/104

Study of the law ...

absorption intensity depends not only on the concentration of water vapors and the length of the path but also on the presence of by-gases, the temperature, and a number of other factors. The authors studied the dependence of infrared radiation absorption by water vapors on the partial pressure of vapors, the path length and the pressure of by-gases. It was established that under the experimental conditions the integral absorption A in the line obeys regularities which were found by Ladenburg and Reiche (Ladenburg, R., Reiche F., Ann. Phys. 1913, v. 42, 181)

A = 
$$\int (1 - \frac{I}{I_0}) dv = 2 \left[ s^0 \gamma^0 \rho_a L (p_a + 6 p_x) \right]^{\frac{1}{2}}$$
 (1)

where pa is the partial pressure of water vapors, px is the pressure of by-gas, So is the intensity and To is the half-width of the line at  $p_a = I$  and  $p_x = 0$ ; L is the path length and O is the relative effectiveness of optical collisions of water molecules with by-gas molecules. For the case of a group of lines

$$A_{n} = \sum_{i=1}^{n} A_{i} = 2 (p_{a}^{1})^{1/2} \sum_{i=1}^{n} [S_{i}^{o} \mathcal{T}_{i}^{o} (p_{a} + \delta_{i}^{o} p_{x})]^{1/2}$$
 (2)

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28405 8/169/61/000/007/058/104 A006/A101

Study of the law ...

The direct application of equation (2) for determining the  $p_a$  values from measured p values, requires that the values  $S_1^0 \mathcal{T}_1^0$  and  $O_1$  be known for each line entering the group. Experiments have shown that at a pressure of  $H_20$  vapors and by-gases, corresponding to the lower atmospheric layers, the following equation is approximately applicable

$$A = m \sqrt{p_a^1} \cdot (p_a + p_x)^k$$
 (3)

where m and k are constant values. In 1957 experiments were carried out to determine water vapor concentration in the atmosphere (up to 15 km altitudes) by the spectral method with the use of formula (3). Spectrometers with diffraction gratings made it possible to determine the moisture of the air at various altitudes from attenuated solar radiation in bands of water absorption 1.4; 1.9 and 2.7  $\mu$ . Spectral sections near 1.2; 1.5 and 2.2  $\mu$  (beyond the absorption bands) were employed as check wavelengths. A PbS photoresistance was used as a radiation receiver. The readings of the device during its free flight on a stratosphere balloon were consecutively transmitted through a telemetric line to the earth. During the flight of the device from 1957 - 1960, data were obtained from the attenuation of solar radiation at various altitudes, which were Card 3/4

2<sup>1</sup>405 S/169/61/000/007/058/104 A006/A101

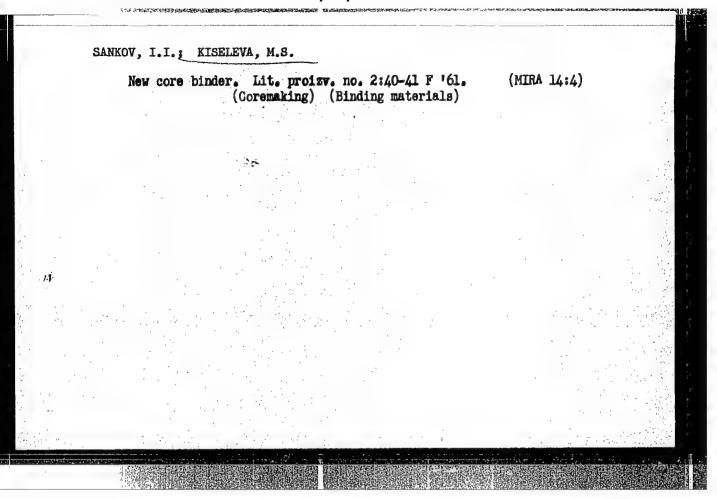
Study of the law ...

used to calculate values of water vapor concentration in the atmosphere with the aid of graduation graphs. Measurements of the air moisture with the aid of the 1.4  $\mu$  band can be performed up to 11-km altitude. For higher altitudes the stronger 2.7  $\mu$ band is employed.

L. Yerasova

[Abstracter's note: Complete translation]

Card 4/4



8/058/61/000/009/014/050

A001/A101

K. Vasilevskiy

3,5110

Vasilevskiy, K.P., Kiseleva, M.S., Neporent, B.S.

TITLE.

AUTHORS:

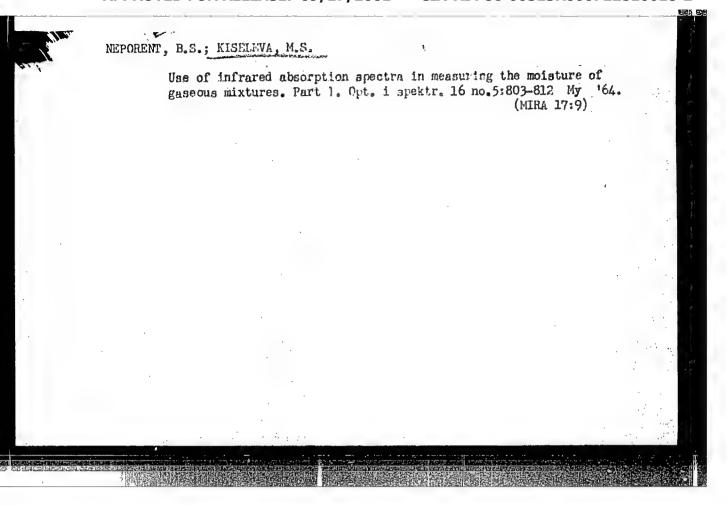
Investigating absorption laws of infrared radiation by water vapors and determining humidity of atmosphere upper layers by the spectral method .

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 91, abstract 9V111 ("Dokl Mezhvuz, nauchn, konferentsii po spektroskopii i spektr, analizu Tomsk, Tomskiy un-t, 1960, 82: - 84)

TEXT: . . . The authors investigated dependence of infrared radiation absorption by water vapors on partial pressure of vapors, length of path and pressure of other gases (argon, N2, air and CO3). The relationships\_obtained are used for determining concentration of water vapors in the atmosphere from attenuation of radiation in absorption bands 1.4; 1.9 and 2.7 microns, measured at various altitudes with an automatic spectrohygrometer during the flight of the instrument in a stratosphere balloon.

[Abstracter's note: Complete translation]

Card 1/1



ACCESSION NR: AP4039257

S/0032/64/030/006/0758/0761

AUTHORS: Kalemichenko, Ya. I.; Kiseleva, M. S.; Meporent, B. S.

TITLE: Optical infrared hygrometer

SOURCE: Zavodskaya laboratoriya, v. 30, no. 6, 1964, 758-761

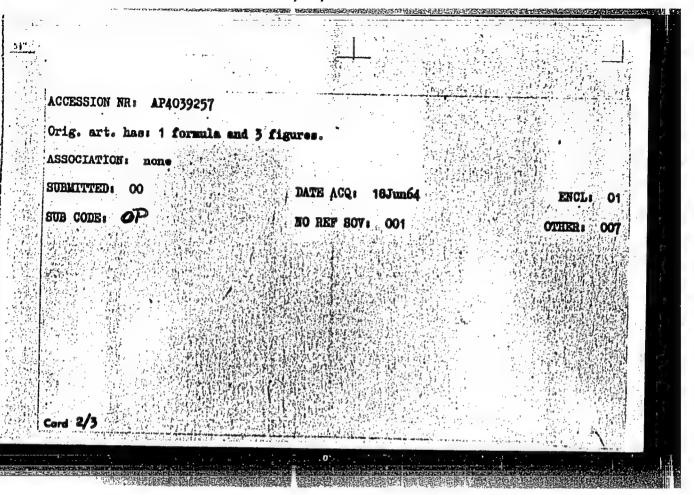
TOPIC TAGS: hygrometer, spectroscopic method, humidity, infrared radiation, optical system, absorbed gas, photometric property

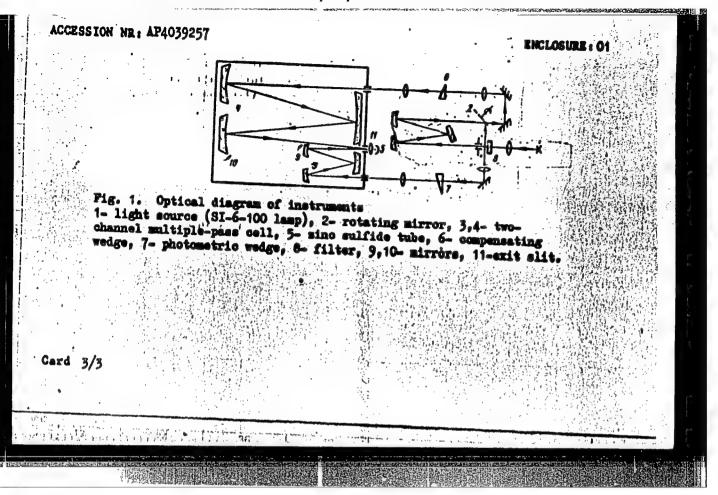
ABSTRACT: The spectroscopic method for measuring humidity has been discussed, and an expression is given for infrared radiation absorption A as a function of temperature and pressure, or  $A = 1 - T = a \sqrt{p} \left(\frac{P}{P_0}\right)^{k/2}.$  The construction details

and operation principles of a two-channel hygrometer with a built-in optical compensation scheme are described (see Fig. 1 of the Enclosure). The two-channel system eliminates errors connected with photometric properties of the instrument, contamination, and absorption. The optical and electric circuits indicate the possibility of measuring light beam intensities with 0.2 to 0.7% accuracy. In the 0.2-90 mm Hg pressure range of humidity measurement the maximum error is estimated at 2 to 3%.

Card 1/3

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722810018-2





ACC NR:	AP6001645 SOURCE CODE: UR/0051/65/019/006/0923/0932	
AUTHOR:	Kiseleva, M. S.; Neporent, B. S.	4
ORG: non	le (2)	
ITLE: U	lse of infrared above.	
us mixtu ining th	res. II. Use of high altitude measurements of solar spectra for deter-	
1 1 To 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	water vapor in the atmosphere	
OUKCE:	Uptika i spektroskopiya w 10 c 1000	
1 11 1	Optika i spektroskopiya, v. 19, no. 6, 1965, 923-932	2015年19月1日
OPIC TAG	S: IR absorption, absorption spectrum, solar radiation, water vapor, at-	
OPIC TAG Ospheric BSTRACT:	S: IR absorption, absorption spectrum, solar radiation, water vapor, at- The authors attempt to evaluate the solar radiation.	
OPIC TAG ospheric BSTRACT: pplicabil	S: IR absorption, absorption spectrum, solar radiation, water vapor, athumidity  The authors attempt to evaluate the possibilities, accuracy and limits of the spectroscopic method.	<b>6</b>
OPIC TAG Ospheric SSTRACT: Oplicabile thods followed	S: IR absorption, absorption spectrum, solar radiation, water vapor, athumidity  The authors attempt to evaluate the possibilities, accuracy and limits of the spectroscopic method for determining atmospheric humidity.  Or determining the absolute values of the absorption function from high all accuracy and limits of infrared color action.	<b>.</b>
OPIC TAG OSPHERIC BSTRACT: OPILCABI OTHORS FO Litude means in method	S: IR absorption, absorption spectrum, solar radiation, water vapor, athumidity  The authors attempt to evaluate the possibilities, accuracy and limits of the spectroscopic method for determining atmospheric humidity. It is shown that the proposed in Part I of this radiation are considered. It is shown that	
OPIC TAG OSPHERIC BSTRACT: OPILCABI OTHORS FO Litude means in method	S: IR absorption, absorption spectrum, solar radiation, water vapor, athumidity  The authors attempt to evaluate the possibilities, accuracy and limits of the spectroscopic method for determining atmospheric humidity.	
OPIC TAG OSPHERIC BSTRACT: OPILCABI OTHORS FO Litude means in method	S: IR absorption, absorption spectrum, solar radiation, water vapor, athumidity  The authors attempt to evaluate the possibilities, accuracy and limits of the spectroscopic method for determining atmospheric humidity. It is shown that the proposed in Part I of this radiation are considered. It is shown that	

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31.	ments by	heric water the authors	and a	than w		
	Dermeeu U	umidity val	ues m	hornings	of milde	11 _ 1
. i	chamers.	The data	showed	l that	when use	e is

altitude. The results of typical experi kers are considered. Agreement is shown usly with respect to various spectral made of solar radiation spectra in which there is no rotational structure, the results of measurements of vertical distribution of atmospheric humidity at altitudes below 15 km in sections or bands at about 1.4, 1.9, 2.6 and 6.3  $\mu$  are in satisfactory agreement; this shows the reliability of the optic method. It is found that water vapor concentration is low at altitudes above 15-20 km, which agrees with the data in the literature. It is assumed that higher humidity concentrations observed in some cases are due to water being carried into the stratosphere with the observation equipment. It is shown that spectra with an unresolved rotational structure may be used for measurements below altitudes of 14-15 km. Spectra with a resolved rotational structure must be used at higher altitudes. The authors thank V. A. Fursenkov, I. V. Papalakhin and V. S. Bortkevich for active participation in taking and analyzing the solar spectra. Frequent discussions of the work with V. G. Kastrov (deceased) were extremely fruitful. Orig. art. has: 11 figures, 3 formulas.

SUB CODE: 08/ SUBM DATE: 15Sep64/ ORIG REF: 006/ OTH REF: 021

Card 2/2

KOCHETYGOV, N.I., kand.med.nauk (Leningrad, P-46, Michurinskaya ul., d.1, kw.242); BALYUZEK, F.V., kand.med.nauk; KISELEVA, M.V.

Experimental data on a comparative evaluation of homotransplantation of blood vessels preserved by vairous methods. Vest.khir. 83 no.9: 65-70 S \*59. (MIRA 13:2)

1. Is nauchno-issledovatel'skoy laboratorii vysokhikh i niskikh temperatur pri kafedre patologicheskoy fiziologii (nachal'nik - profl. I.R. Petrov) i kafedry operativnoy khirurgii (nachal'nik - prof. A.N. Haksimenkov) Voyemno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.

(BLOOD VESSELS. transplantation)

S/203/63/003/001/012/022 A061/A126

AUTHORS:

Goncharova, Ye. Ye., Kiseleva, M. V.

TITLE:

On the conditions of radio communications in high and middle

latitudes

PERIODICAL: Geomagnetizm i aeronomiya, v. 3, no. 1, 1963, 94 - 103

TEXT: For a study of conditions of radio communications as depending on the state of the ionosphere, the authors analyzed results from Canadian observations (Canadian Ionospheric Data. Ottawa. Canada. 1957, no. 1 - 12) concerning the transmission of radio signals over the following radio lines: Winnipeg - Washington, Winnipeg - Hawaii, Churchill - Washington, Baker Lake - Washington, Baker Lake - Hawaii, Resolute Bay - Washington, Resolute Bay - Hawaii. Results: 1) When the ionosphere was calm or little disturbed, good communications were possible on all radio lines up to 4,000 km. On radio lines exceeding 4,000 km, communications were disturbed for 10 - 15 hours in a day even if the ionosphere was calm. 2) During strong ionospheric disturbances, communications were

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\$/203/63/003/001/012/022 On the conditions of radio communications disturbed longer on all lines. These disturbances were strongest on lines exceeding 4,000 km. On short lines communications became the worse, the nearer they came to the reflection point. 3) The frequency rise over the classical MIH (MPCh) can be explained in 30% of the cases by reflections of the radio waves from the E layer. Radio communications on radio lines going through zones of aurora polaris can be established chiefly in night and morning hours; on the radio lines in middle latitudes, in night and daytime hours. There are 5 figures and 4 tables. ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation AS USSR) SUBMITTED: July 27, 1962 Card 2/2 ALL NR: APGO32400

AUTHOR: Kiseleya M. W.

SOURCE CODE: UR/0203/66/006/005/0869/0874

ORG: Institute of Terrestrial Magnetism, the Ionosphere, and Radio Wave Propagation SO AN SSSR (Institut zemnogo magnetizma, lonosfery 1 Rasprostraneniya Radiovoln AN SSSR)

TITLE: Conditions for radio communication at high latitudes during years of decreased solar activity

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 869-874

TOPIC TAGS: ionospheric propagation, ionospheric disturbance, radio wave propagation, point to point radio, RADIO TRANSMISSION

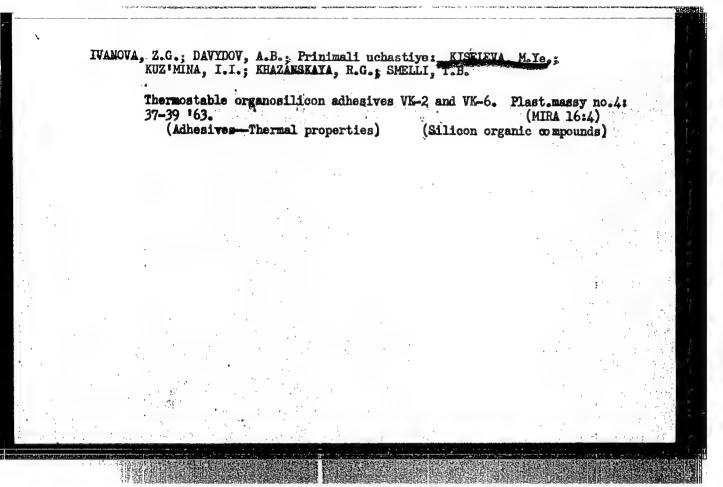
ABSTRACT: A study of radio transmission on high-latitude paths under various degrees of ionospheric disturbance is described. The study uses data obtained during January, June, October and December, 1962 on radio paths between Resolute Bay and Washington, and Churchill and Washington. Both of these paths intersect regions of auroral absorption. On both paths standard transmitters (WWV—Washington) were used with transmitted frequencies and powers of 2.5, 5.0, 10, 15, and 20 Mc and 0.1-9 kw. Transmission quality was determined by measuring the received signal on a 10-step scale; a reading of less than 3 steps

Card 1/2

UDC: 550.388.2

indicated a loss of transmission. Maximum and minimum usable frequencies were calculated from measured ionospheric data; in cases where no data was available monthly prognostic maps were used. Of the two hops the Churchill—Washington hop had more outage time because of a total absorption region at one its reflection points. Best transmission was observed during the summer and worst during the equinox (October). The primary cause of interruptions was anomalous absorption. Loss of transmission was 7% during absence and 22% during presence of magnetic disturbances in the ionosphere; radio transmission for all months averaged 80%. Orig. art. has: 2 figures and 5 tables.

SUB CODE: 04, 17/ SUBN DATE: 29Apr65/ ORIG REF: 009/
OTH REF: 003

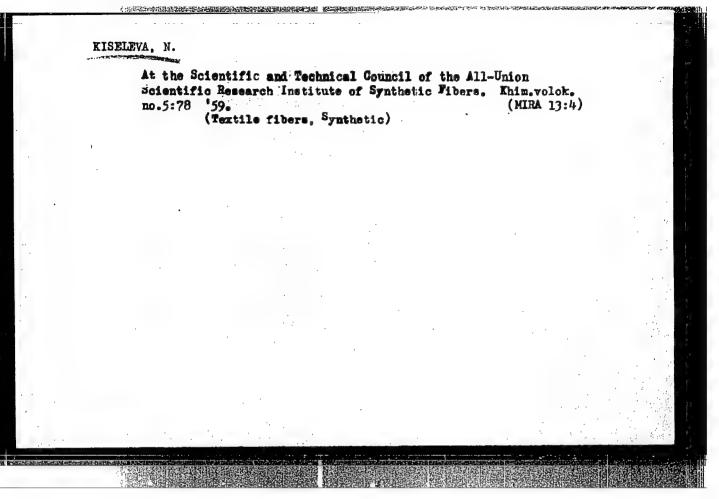


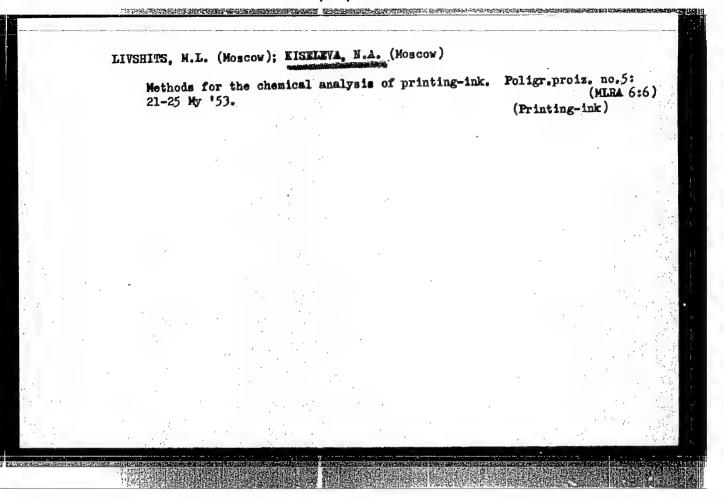
POPOVA, A.I. (Odessa); KATSER, L.I. (Odessa); KISILEVA, .N., nachal'nik; BABSKIY,
A.A., professor, nauchnyy rukovoditel'.

Effect of intraarterial administration of novocaine in thrombangiitis obliterans; electrocardiographic data. Klin.med. 31 no.7:57-59 Jl '53.

(MLRA 6:9)

1. Basseynovaya bol'nitsa moryakov.
(Blood vessels—Diseases) (Novocaine)





### "APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722810018-2

KISELEVA, Nadezhda Alekseyevna; BEREZIN, B.I., kand.tekhn.nauk; BORISHCHEVA, N.W., red.; CHICHERIN, A.N., tekhn.red.

[Chemical analysis of printing industry materials] Khimicheskii analiz poligraficheskikh materialov. Moskva, Gos.izd-vo "Iskusstvo." Pt.1. [Testing printing industry materials] Ispytaniia poligraficheskikh materialov. 1958. 183 p. (MIRA 12:4) (Printing machinery and supplies)

KISELEVA, N. A. Cand Tech Sci -- "Chemical analysis of polygraphic materials."

Mos, 1961 (Min of Higher and Secondary Specialized Education RSFSR. Mos Polygraphic Inst). (KL, 4-61, 196)

/i5

### YAKUBOVSKAYA, V.I.; KISELEVA, N.A.

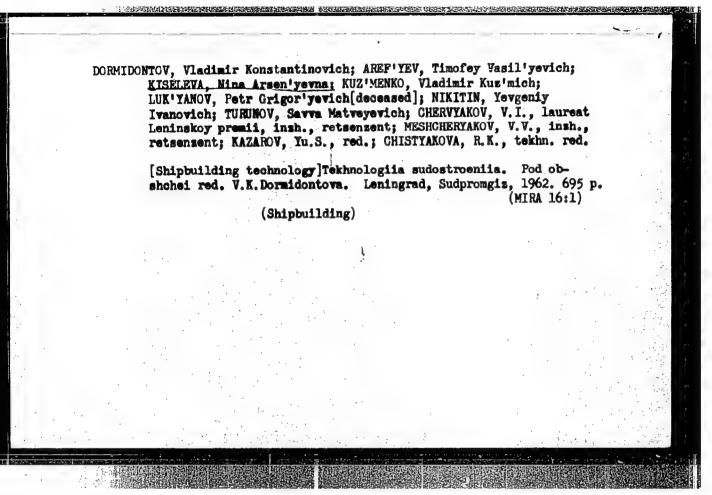
Effect of aminazine on the amount and synthesis of cholesterol in the liver in pigeons. Vop. med. khim. 7 no. 1:93-96 Ja-F 161. (MIRA 14:4)

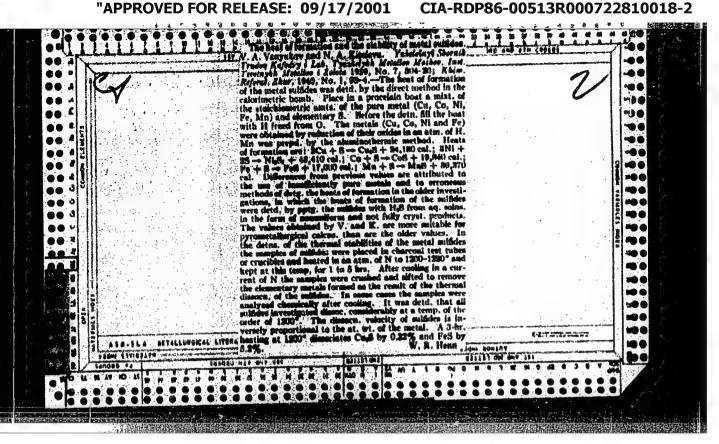
1. Chair of Biochemistry of the Karaganda Medical Institute. (LIVER) (CHOLESTEROL) (CHLORPROMAZINE)

KISELEVA, N.A.; KUPREVICH, V.F.

Composition of free amino acids in potato leaves both healthy and affected by crinkle mosaic disease. Dokl. AN BSSR 7 no.3:199-201 Mr '63. (MIRA 16:6)

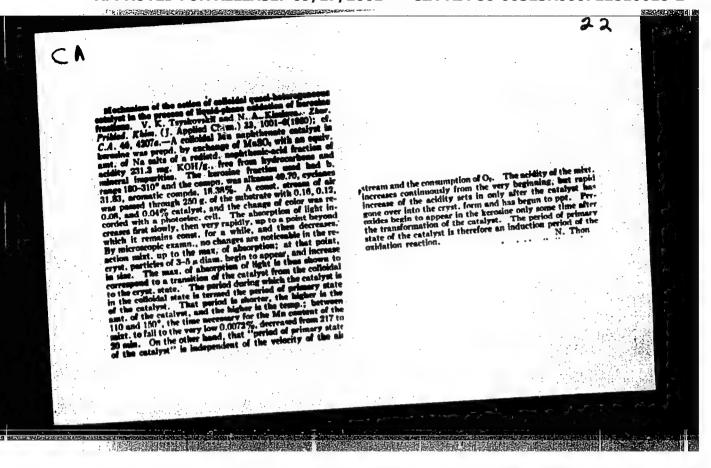
l. Laboratorii fiziologii i sistematiki nisshikh rasteniy.
(Mosaic disease) (Amino acids)

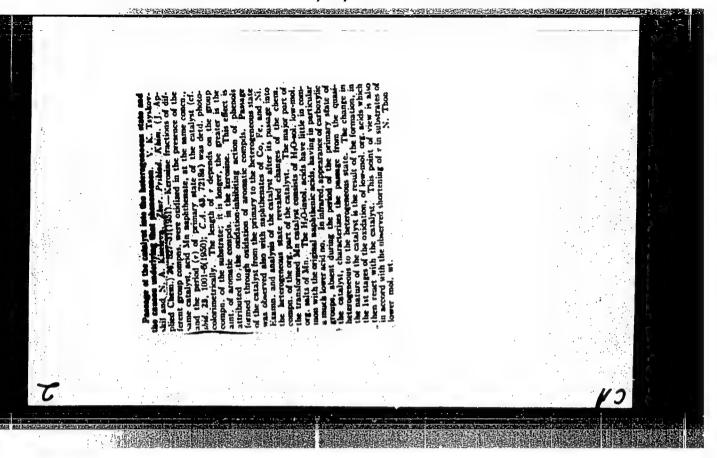


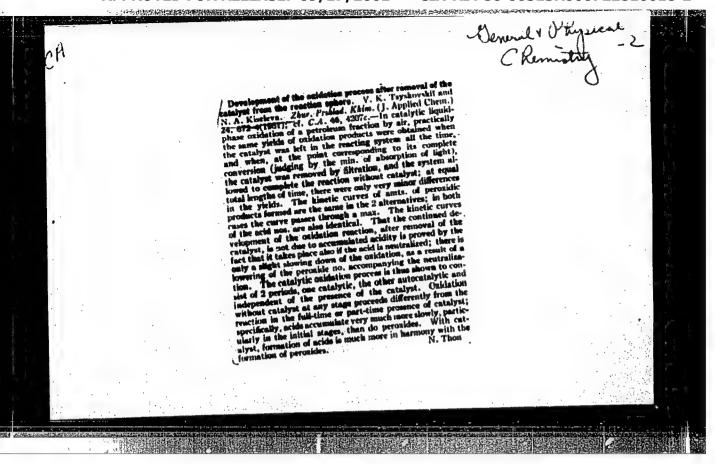


### "APPROVED FOR RELEASE: 09/17/2001

#### CIA-RDP86-00513R000722810018-2







Kiseleva, N. A

USSR / Analytical Chemistry. Analysis of Inorganic Substances.

G-2

Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27144.

Author : N.A. Kiseleva, I.B. Megorskaya, M.I. Rozova.

Title : Determination of Small Amounts of Copper by Method of Isotope Indication.

Orig Pub: Zavod. laboratoriya, 1956, 22, No. 11, 1291 - 1292.

Abstract: The determination of Cu is based on the measurement of the activity of the little soluble complex Cu(C6H8N2)2 HgI4 containing the radioactive isotope II31. The precipitation is carried out with o-phenylenediamine and mercury-iodide of K in an acid medium. The washed and dried precipitate on the filter is covered with varnish and its activity is measured. The average accuracy of determination at 0.05 mg of Cu per lit is ±3%.

Card 1/2 State Inst. applied Chem.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722810018-

USSR/Analytical Chemistry. Analysis of Inorganic G-2 Substances.

Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27144.

The determination of the filtrate activity and the computation of the precipitate activity by the difference produces somewhat worse results. The determination of less than 0.05% mg of Cu is possible only in the presence of a carrier (for example, of Fe (OH)3); the average error of Cu determination is 6.3% in this case.

ALKHAZOV, T.G.; BELEN'KIY, M.S.; KISELEVA, N.A. Effect of isobutylene on the oxidative dehydrogenation of butylenes. Izv. vys. ucheb. zav.; neft' i gaz 8 no.2:82,88 '65. (MIRA 18:3) 1. Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova.

KUPREVICH, V.F.; SHCHERBAKOVA, T.A.; SEROVA, Z. Ya.: KISELEVA, N.A.; SAMUYLENKO, A.I.; REUTSKAYA, L.N.

Physiological changes in rye infected with rust. Dokl. AN BSSR 9 no. 11:758-760 N \*65 (MIRA 19:1)

1. Otdel fiziologii i sistematiki nizshikh rasteniy AN BSSR.

ACC NR: AP6034188

SOURCE CODE: UR/0250/66/010/010/0796/0799

AUTHOR: Kiseleva, N. A.

ORG: Department of Physiology and Taxonomy of Lower Plants, Academy of Sciences, BSSR (Otdel fiziologii i sistematiki nizshikh rasteniy AN BSSR)

TITLE: The effect of rust infection on the amino-acid composition of rye leaves (variety Partizanka)

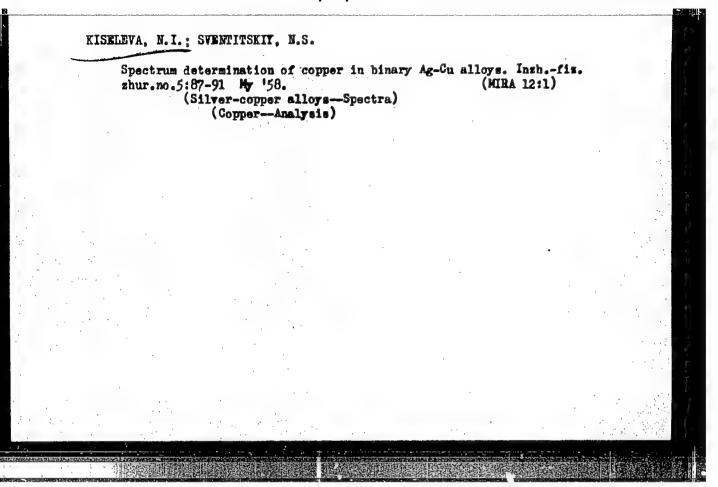
SOURCE: AN BSSR. Doklady, v. 10, no. 10, 1966, 796-799

TOPIC TAGS: plant physiology, plant metabolism, plant parasite, AGRICULTURE CROP, AMINO ACID, PLANT DISEASE.

ABSTRACT: Quantitative analysis of the amino-acid composition of winter-rye leaves (variety Partizanka) infected with *Puccinia dispersa* rust fungi showed that the concentration of free amino acids was higher in infected plants, and the amounts of aspartic and glutamic acids, leucine, and alanine were higher than in healthy plants. No qualitative differences in amino-acid composition between healthy and sick rye plants were observed. The altered amino-acid balance in sick plants indicates adaptation of the projein metabolism of the host to needs of the parasite. Orig. art. has: 1 figure and 3 tables. [W.A. 50]

SUB CODE: 06/ SUBM DATE: 01Mar66/ ORIG REF: 004/ OTH REF: 004

Card 1/1



ZAKHAROV, N.D.; Prinimali uchastiye: BYKOVA, S.A.; KISELEVA, V.I.;

KISELEVA, N.I.; KRYLOVA, N.O.; MAKAROVA, L.V.

Nonsulfur vulcanization of some synthetic rubbers. Part 4:

Effect of the nitrile group content on the thermal vulcanization of butadiene nitrile rubbers. Vysokom.soed. 5 no.8:1190-1195

Ag '63.

1. Yaroslavskiy tekhnologicheskiy institut.

(Rubber, Synthetic) (Vulcanization)

(Nitrile rubbers)

SOV/75-15-5-8/24 Poluektov, N. H., Kiseleva, N. K. (Deceased) AUTHORS: On Color Reactions of Collium and Indium Suits With Organic TTTLE: Reagents (O tovetnykh reaktstyskh doley galliya i indira a organicheskimi reaktivami) Zhurnal analiticheskoy khimii. 1958. Vol 14. Nr 5. pr 555-561 PERTODICALE russa i Comparatively few reactions are known for gailtum and inclum ABOUNGOT: water can furnish a basis for the elaboration of photometric merhods of determination. Therefore, still today, denydroxy quinoline, quinalizarin, and others (Rer 1) that are hardly specific are used. It is true that the reactions of various

and naphthalene series with indiam salts have been investigated (Nef 2), but their sensitivity has not been specified. The paper under review draws with the question of color and theorescent reactions with garriam and ladges and their examination. In connection with this, the following types of compounds here examined: 1) operating drawy are used. These compounds were analyzed most thoroughly. Texamo 2-naphthol 4-

nydroxy anthrequinones and hydroxy quinones from the benzene

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209/75-15-7-8/74

On Coror deactions of Callium and Indium Salts (1th Organic Reagents

surphenic acid and picramic acid were used as initial resectants for the respective diazo compounds. The second compounds were prents were prents, which in continuation formished a hydroxyl group in an ortho-position to the aco group. 2) Azo dies which contain one hydroxyl group in peri-position (at a naphthalene nucleus) and another one in ortho-position to an accompand which originate from diazonized H or K acids and resoccinel or orcinel (1). 1) Azo dies that contain two advancement hydroxyl groups, especially p-nitrobenzene azo pyrocatechol (11). 4) Schitt's bases that contain hydroxyl groups in ortho-position (III) and in ortho- and peri-position (IV)

N=CH HO

009/75-93-5-8/24

On Boice descrious of Gallaum and Indiam Salta With Organic Reagents

th Sectivatives of Papaget Claurenes galists. P. Fainyaroxy fluorescets and 9-sectors the sylection a cumpare fluorescets and 9-sections. However a summer of reactions to Indian were studied, which utilize the property of this element of forming complex amons.

was degreered that by means of property one he detected that with the independent of the kind that and been investigated between Phas. e.s., geilium of high sensitivity can be detected to means of fluorescence with 4-sulto 2-nydroxy naphthalene is not a 2-4-athyuroxy benners. Indian can be detected by means of the color reaction with alphanyt carbazons and in resultions with some of the other dies tested. The paper gives has an sensitivity and specificity of the reactions analyzed. They are 3 tubles and the references. Work which are Coviet.

4 - 340 - Backet

Institut observery i mediculture as arthur od 0008.
Isnownia min w Odesce (Institute di Meneral and Inorganic Unemissiv, L. Skrodk, Laboratories in Edessa)

Gard 5/4

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3/058/62/000/006/091/136 A057/A101

24 2600

Kiseleva, N. K., Kolomiyets, B. T.

AUTHORS:

On the role of admixtures in the internal photoeffect in CdTe and

TITLE:

. ZnTe

PERIODICAL:

Referativnyy zhurnal, Fizika, no. 6, 1962, 38, abstract 6E304 (In collection: "Fotoelektr. 1 optich. yavleniya v poluprovodnikakh".

Kiyev, AN USSR, 1959, 99 - 106)

The effect of admixtures upon the electroconductivity and photoconductivity of CdTe and ZnTe crystals was investigated. The preparation method of crystals, alloyed with admixtures, by which CdTe crystals of the n-type can be obtained, is described. It is demonstrated, that the introduction of some admixtures (Sn and Ta) into CdTe effects a change in the sign of current carriers and changes strongly the spectral distribution of the internal photoeffect. The introduction of admixtures shifts the maximum photoconductivity to the short-wave range (460 m/4). In an analogous way acts also the disturbance of the stoichiometric ratio owing to a surplus of Cd. The investigation of the role of admix-

Card 1/2

### "APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722810018-2

On the role of ...

S/058/62/000/006/091/136 A057/A101

tures in the photoconductivity of ZnTe indicates a qualitative coincidence with the case of photoconductivity in CdTe. It is assumed that the presence of the photoconductivity maximum in the depth of the absorption band indicates that the edge of the absorption band corresponds not to the basic, but to the admixture absorption of CdTe and ZnTe crystals.

V. Sidorov

[Abstracter's note: Complete translation]

Card 2/2

**23137** S/181/61, 03/005/042/042 B111/B202

24,7/00 (1153,1160,1136)

AUTHORS:

Ivanov-Omskiy, V. I., Kiseleva, N. K., and Kolomiyets, B. T.

TITLE:

Production of twin crystals of indium and gallium antimonides

PERIODICAL:

Fizika tverdogo tela, v. 3, no. 5, 1961, 1621-1622

TEXT: The authors attempt to produce specimens with abruptly variable parameters by growing crystal twins from two semiconductors on the basis of intergrowth. The authors suspect that this intergrowth is a sufficient condition for the isomorphism of the mentioned compound. The twin crystals condition for the following way: The higher melting part of the twin were prepared in the following way: The higher melting part of the twin crystal (gallium antimonide) is cut out from one piece; the indium antimonide is pulled from the melt and grows to the gallium antimonide. To study nide is pulled from the melt and grows to the gallium antimonide. To study the structure, the authors cut out specimens perpendicular to the line of separation of the two components. The surface of the cut was microscopically analyzed. The separation line between In and Ga antimonides as well as the crystal structure on both sides of the line of separation could be distinctly discorned. It was observed that in polycrystalline seeding each nucleus of the Ga antimonide forms a nucleus in the In antimonide. As could be seen

Card 1/2

**23137** 5/181/61/003/005/042/042 B 111/B202

Production of ...

on the pictures of the cut the seeds of gallium antimonide consisted of some twin crystals (polysynthetic Ga antimonides). The In-antimonide grows to the Ga-antimonide in such a way that the direction of the twin plane and the number of twin crystals which is given by the seeding of gallium antimonide are conserved. There are 2 figures and two references: 1 Sovietbloc and 1 non-Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut imeni A. F. Ioffe AN SSSR

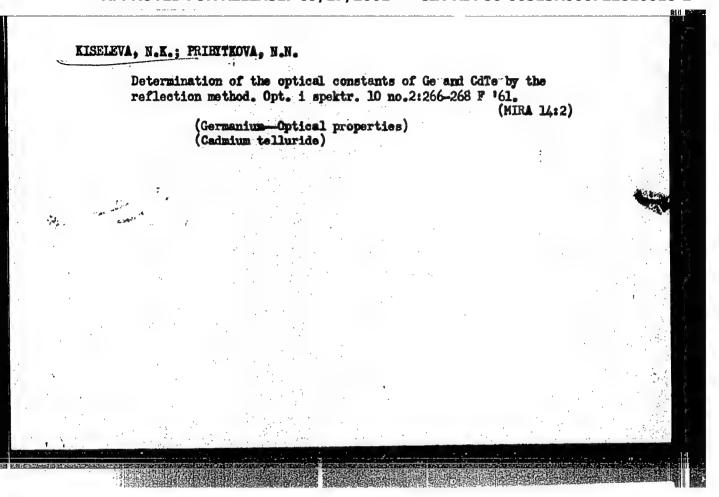
Leningrad (Institute of Physical Technology imeni A. F. Ioffe

AS USSR Leningrad)

SUBMITTED:

January 2. 1961

Card 2/2



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ACCESSION NR: AP4039411 S/0070/64/009/003/0439/0442

AUTHOR: Kiseleve, N. K.

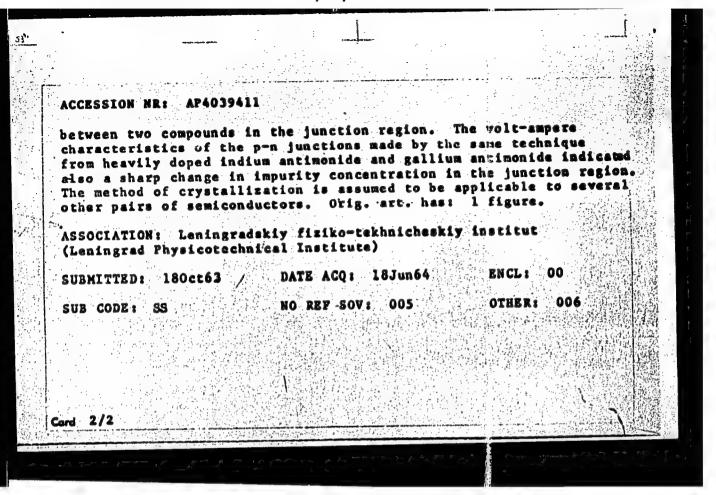
TITLE: Preparation and some properties of indium atimonide-gallium antimonide heterogeneous junctions

SOURCE: Kristallografiya, v. 9, no. 3, 1964, 439-442

TOPIC TAGS: semiconductor device, indium antimonide, gallium antimonide, p-n junction, junction preparation, mel: crystallization, junction electrical property

ABSTRACT: Indium antimonide-gallium antimonide junctions for semiconductor devices have been prepared by crystallization either from
pure indium antimonide or indium antimonide containing up to 42
gallium antimonide melts using a gallium antimonide seed crystal.
The mechanism of junction formation is discussed in both methods,
which were derived either from the nonequilibrium or equilibrium
state in the seed-melt system. Photomicrographs of the cross
sections of thermally etched twin crystals show a therp transition

Cord 1/2



KISELEVA, N.K.

Preparation and certain properties of the heterotransitions indium antimonide - gallium antimonide. Kristallo rafiia 9 no.3:439-442 My-Je '64. (MIRA 17:6)

1. Leningradskiy fiziko-tekhnicheskiy institut.

#### CIA-RDP86-00513R000722810018-2 "APPROVED FOR RELEASE: 09/17/2001

ASD(a)-5/AFWL/ESD(t)/RAEM(t) L 10431-65 5/0109/64/009/010/1892/1893 ACCESSION NR: AP4046691

AUTHOR: Kiseleva, N. K.

B

TITLE: Electrical properties of InSb-GaSb heterojunctions

SOURCE: Radiotekhnika i elektronika v. 9, no. 10, 1964, 1892-1893

TOPIC TAGS: semiconductor, heterojunction, InSb-GaSb heterojunction

ABSTRACT: The experimentally determined electrical properties of InSb-GaSb heterojunctions with strong-alloyed regions of p-type InSb and n-type GaSb are reported. InSb was doped with Zn; GaSb, with Te. The hole concentration in InSb was (2.6-3.3) x 1020 per cm2; the electron concentration in GaSb, 4.3x 1046 per cm 5. Oscillograms of current-voltage characteristics are presented; max current was 300 amp/cm2 at 0.14 %; min current, 240 and 200 amp/cm3 at 0.31 v and 0.38 v, at room and liquid-nitrogen temperatures, respectively. The growncrystal heterojunctions can be used for manufacturing heavy-current tunnel diodes. Orig. art. has: I figure and I table. Ozonian ramo bi chorrent spieges de sacial de la circulat de più assett

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ACCESSION NR: AP40466	91		100,216	2
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	71	•		

(MIRA 17:11)

KISELEVA, N.K.

Electrical properties of heterojunctions of indium antimonide and galium antimonide. Radiotekh. i elektron. 9 no.10:1892-1893

0.164.

1. Fiziko-tekhnicheskiy institut im. A.F. Ioffe AN SSSR.

BUNAREVA, Z.S.; PARKHOMCHUK, V.I.; KISELEVA, N.K.; KOLYSHKINA, Yu.I.

Antistatic finishing of polyvinyl chloride fibers. Khim. volok. no.6:20-22 165. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel skiy institut iskusstvennogo volokna (for Bunareva, Parkhomchuk). 2. Vsesoyuznyy nauchno-issledovatel skiy institut sinteticheskogo volokna (for Kiseleva, Kolyshkina). Submitted February 25, 1964.

L 25445-66 EWT(1)/EWT(m) JD/JG SOURCE CODE: UR/0181/66/008/003/0967/0969 ACC NR: AP6009698 Kolomiyets, B. T. AUTHORS: Kiseleva, N. K.; ORG: Physicotechnical Institute im. A (Fiziko-tekhnicheskiy institut AN SSSR) TITLE: Recombination radiation of gallium antimonide SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 967-969 TOPIC TAGS: gallium alloy, antimonide, recombination radiation, twinning, pn junction, spectral distribution, radiation intensity, ABSTRACT: Whereas earlier investigations of recombination radiation were made in gallium antimonide p-n junctions obtained by diffusion of Zn in Te-doped GaSb of n-type, in the present investigation the p-n junctions were obtained by growing crystals having one or several twinning planes from a melt doped with Te. Such p-n junctions are parallel to the twinning planes and require no special acceptor impurity. The authors investigated the dependence of the radiation intensity on the current at 377K, the influence of the state of the Card

section (~I ) section result pulse. The continuous of than at 300K, shifts the persundant increases short wave result those by other 300K can be result unique ideauthors thank the work and I figures.	e sample on this depend ral distribution of the dence of the radiation (α = 1:25 4.3), a ting from the heating cefficient α depends of the recombination radiated the nonlinearity ak of the spectral distribution of the spectrum. The indicates that the celated to transitions the intification of these IB. V. Tsarenkov for additional of the SUBM DATE: 040ct65/	intensity has an intensity has a surface state at ion is 10 15 to its weaker. A change tribution to shorte the intensity increases the endowed radiation chrough shallow imposes the endowed radiation chrough shallow imposes is as yet distribution to the intensity in the intensity has an intensity has a supplied to have a supplie	and 300K: The initial nonlinear is a sullinear is the current. At 77K the imes larger e in temperature r wavelengths, nergy in the results with bands at 77 and urity levels, fficult. The	
Card	2/2 7.0/			

ARIYEVICH, A. M; KISKLEVA, N. L.

Pirst results of antibiotic therapy of dermatomycosis. Vest.
vener., Moskva no.2:51 Mar-Apr 1952, (CIML 22:2)

1. Professor for Ariyevich.

RISELEV, A.K.; RISELEVA, H.M.

Biffect of twists during spinning and twisting on the properties of twisted melange thread. Izv.vys. ucheb.zav.; tekh.tekst.prom. no.2:22-31 '56. (NIRA 11:5)

1. Ivanovskiy tekstil'nyy institut. (Cotton spinning-Tables, calculations, etc.)

EWT(1)/EWT(m)/ETC(f)/EWG(m)/T/EWP(t) IJP(c) RDW/JD/GG L 24371-66 ACC NR: AP6009704 SOURCE CODE: UR/0181/66/008/003/0980/0982 49 AUTHOR: Strel'tsov, L. N.; Kiseleva, N. M.; Kireyev, P. S. ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splayoy). TITLE: Anomalous shift of the intrinsic-absorption edge under the influence of an electric field in films and amorphous samples of selenium SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 980-982 TOPIC TAGS: selenium, absorption edge, line shift, electret, surface property ABSTRACT: This is a continuation of earlier investigations (FTT v. 7, 2713, 1965) of the intrinsic absorption edge in GaAs, CdS, and CdTe. The present study is devoted to selenium, where instead of the theoretically predicted shift of the absorption edge toward the long-wave side, the shift is toward the shorter wavelength. The amorphous-selenium samples were prepared in the form of plates 200-400 µ thick, or films produced by thermal sputtering in vacuum, ranging in thickness from 1 to 50  $\mu$ . The spectra with and without field were obtained with an ISP-51 spectrograph. An incandescent lamp was used as a light source. The spectrograms were analyzed with the aid of a microphotometer (MF-4). The spectra were taken at room and nitrogen temperatures, and the field was 5 kv. To ascertain the cause of the anomalous shift of the intrinsic absorption edge, x-ray pictures were taken of the sample before and after the application of the field, to check on the structural changes brought about by the field. The hypothesis that the shift may be due to the fact that selenium exhibits Card 1/2

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SOV/68-59-7-22/33

AUTHORS: Glezer, I.G., Edel'man, Sh.I., Ionina, M.A. and Kiseleva,

N.M.

TITLE: Experience of the Operation of a Plant for the Continuous

Washing of Benzole

PERIODICAL: Koks i khimiya, 1959, Nr 7, pp 54 - 57 (USSR)

ABSTRACT: Operation of the plant for the continuous washing of raw benzole is described. The plant was erected at the

Yenakiyevo Works in 1955 and underwent a number of modifications. The scheme finally adopted is as follows: raw benzole-toluole-xylole fraction (95% distills over at 140 - 145°C) and concentrated sulphuric acid flows from gravity tanks through a proportioning equipment

into a centrifugal pump where the initial mixing takes place, the pump passes the mixture through 8 mixing balls in series (250 mm dia made from cast iron) interconnected with 1" pipe forming an angle of 90° between the inlets and outlets. Here the main part of the reaction takes

place. In order to prolong the time of contact of the fraction with the acid, the mixture is passed into a contact vessel (cylindrical vessel - no details of the

Card 1/3 internal design are given). From the contact vessel the

SOY/68-59-7-22/33

Experience of the Operation of a Plant for the Continuous Washing of Benzole

mixture is passed to a mixing ball to which technical water for the regeneration of acid is added. From this mixer the mixture is passed to a settling tank where the regenerated acid and acid tar settle. The regenerated acid flows continuously by gravity into a storage tank. The acid tar is removed periodically once every 2 - 3 days. The acid washed fraction flows by gravity from the settling tank into a bowl mixer to which a centrifugal pump passes to aqueous solution of alkali. The mixture is passed into a settling tank from which alkali is passed into an intermediate tank for further re-use while the washed benzole is passed into a storage tank. A temperature of 45 - 48°C is maintained throughout the process. In winter this temperature is maintained by Card 2/3 preheating the raw fraction to 27 - 30°C. The con-

SOV/68-59-7-22/33

Experience of the Operation of a Plant for the Continuous Washing of Benzole

sumption of acid depends on the temperature at which 95% of the fraction distills over (Table 1). The average consumption of acid (after subtraction of the regenerated acid), amounts to 15 kg/ton of benzole. The wash losses of benzole were decreased from 6.8% in 1955 to 3.9% in 1957 (Table 2). The installation is recommended for general use.

There is 1 figure and 2 tables.

ASSOCIATION: Yenakiyeskiy koksokhimicheskiy zavod (Yenakiyevo Coking Works)

Card 3/3

ISCLEVA, N.N.

AUTHOR TITLE DOBYCHIN D.P., KISELEVA N.W. 20-2-37/67 On the nature of thermal transformations in alkali boro-

silicate glass. (O prirode termicheskikh prevrashcheniy v

shchelochnoboro-silikatnykh steklakh.- Russian)

PERIODICAL

Doklady Akademii Wauk SSSR 1957, Vol 113, Nr 2, pp 372-375

(U.S.S.R.)

ABSTRACT

As known the structure of porous glasses, which are formed by treating alkali-borosilicate glass with acid solutions (1-4), depend on both the composition of the initial glass and of its heat treatment and of lixiviation conditions. With the intention of examing the problems of the structure of porous glasses and studing the composition of sodium borosilicate glass the authors investigated the kinetics of the processes in this latter glass, which here occur on the occasion of heat-treatment. The sorption method of the structural investigation of porous glass was applied by means of a quarts scale. Water served as sorption material. The authors mentioned already before that after a long heat treatment at a temperature of 5300 the radius of the pores in the glass Na-7/23 increases by lixiviation with increasing duration of this heat treatment. On the other hand already after a heat treatment of half an hour or longer at a

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On the nature of thermal transformations in alkali borosilicate glass. 20-2-27/6?

temperature of 650° the values of the radius and the space of the pores remain steady, independent of the lixiviation conditions in acids. This demonstrates that the fine-pored siliceous earth network extracted by alkalis from high-temperatured glass (treated at 780°) is no "secondary silicio acid", which might have coagulated in the pores during the extraction in acid. In the experiment the same glass Ma-7/23 from the same fused mass but of two different initial conditions was heat-treated: A. was hardened down from 8500 and B. after a rough glowing down from high temperatures and a following slow cobling. Lixiviation was carried out in a HCl-solution of 3 n (15 cm3 per 1 g glass; powder, fraction 100 - 150 m) at 500. The results show modification curves (ill. 1 and 2) of the pore-radius and -space according to the duration of the heat treatment at different temperatures for both kinds of glass. From the shape of the curve it becomes manifest that there are at least two structural processes proceeding in this glass: 1. a faster one which bewomes evident in a decrease of the radius and the entire space of the pores and 2. a slower one, which allows these two values to rise to a certain limit. The velocity of both processes highly increases with rising temperatures. As the first

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process does not occur in samples of the A-type, the authors presume that it is connected with the destruction of the regions of chemical heterogeneity till then existing, furthermore with the rearrangement of the spatial network of glass and with the reorientation of chemical bonds. The second, slower process, however, seems to be connected with the diffuse transmission of the substance into glass. At about 5850 the authors discovered a critical value (or a small critical region). Above the latter a short heat treatment (half an hour at 6500) was sufficient to make the radius value of the pores of the glass lixiviated by acid steady (and not high). The authors believe that at this temperature in the boron-sodius-regions an uninterrupted acid-resistant siliceous earth skeleton begins to be composed. The pore-radius above 5850 becomes smaller with rising temperatures of the heat treatment. At temperatures under 7300 opplescence rises with increasing duration of heat-treatment without a noticeable jerk in the region of 5850. The increase of the pore-radius in

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connection with relatively increasing total volume of the pores denotes that the total number of pores and so the regions of the chemical heterogeneity falls during the heat-treatment. The equation of O.M. Todes

$$\frac{1}{N} = \frac{1}{N_0} + k \cdot t$$

satisfactorily describes the kinetics of the integration process of the regions, which are limitated by soid, of chemical heterogeneity (ill. 3). The decrease of the number of particles when their average size increase gives evidence of processes of an isothermal distillation and recondensation. Explaining the nature and the kinetics of the processes which occur during the heat treatment of sodium-borosilicate glass warrants the controllability of the glass production with a required structure, among others of bidisperse and wideporous glass (radius of magnitude of some 100.000 E).

(3 illustrations, 2 schedules, 13 citations from publications)

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On the nature of thermal transformations in alkali borosilicate glass.

20-2-37/67

ASSOCIATION: not given.

PRESENTED BY: A.W. TERENIN, Member of the Academy.

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CARD 5/5

KISSLEVA, N.N.

AUTHORS:

Dobychin, D. P., Kiseleva, N. H.

76-1-4/32

TITLE:

The Effect of the Thermal Treatment of Sodium Borosilicate Classes on the Porous Structure of Their Residues After Acid Etching (O vliyanii termicheskoy obrabotki

Acia Etching (O vilyanii totalisa poristuyu strukturu natrovoborosilikatnykh stekol na poristuyu strukturu

produktov ikh vyshchelachivaniya v kislote)

PERIODICAL:

Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 1, pp. 27-34

(USSR)

ABSTRACT:

In reference 17 the first mentioned author showed that the pore-radii of a porous glass which was obtained by means of acid etching of the Na-7/23 glass (which was subjected to a continuous thermal treatment at 530°C) do not reach any constant value but that they further increase with the increase of the duration of the thermal treatment of the original glass. Na-7/23 denotes a composition of 7 mol % Na<sub>2</sub>O, 23 mol % B<sub>2</sub>O<sub>3</sub> and 70 nol % SiO<sub>2</sub>. In reference 18 the two authors showed that the thermal treatment of Na-7/23 at temperatures of up to 585° caused at least two structural processes: 1) One quicker, which becomes manifest in a decrease of the radius as well as of the total volume of

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The Effect of the Thermal Treatment of Sodium Borosilicate 76-1-4/32 Classes on the Porous Structure of Their Residues After Acid Etching

the pores. 2) One slower which causes an uninterrupted increase of the pore-radius as well as an increase of the total volume of the pores unto a certain value dependent on the temperature. In the came of the 1st process the authors assume that it is connected with the destruction of the earlier present (if there was a preliminary heat treatment) domain of chemical heterogeneity with the re--arrangement of the glass-lattice as well as with the reorientation of chemical compounds causing only small lattice element displacements. The 2nd slower process, however, is connected with the transfer of the substance by means of a diffusion process of the great boronsodium domains at the expense of the disappearance of small ranges corresponding to the kinetic recondensation law. Contrary to reference 20 the authors show that the structure of porous glass is essentially determined by the division into chemical heterogeneity domains of the initial glass. At about 585°C a critical value for the temperature was found. It divides the heat treatment ranges of the class according to the properties of the porous glass obtained from it. At temperatures of above 585°C a short heat treatment (at 650°C,

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The Effect of the Thermal Treatment of Sodium Borosilicate 75-1-4/32 Glasses on the Porous Structure of Their Residues After Acid Etching

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- half an hour) is sufficient for the pore radius (of the porous glass obtained by means of acid etching) to acquire a constant value (which does not change with longer heat treatment but decreases with the rise of the temperature of the heat treatment of the initial class) (references 17, 18). At 590°C a porous glass is obtained with a pore radius of from 18 - 20 A and at 850°C one of about 8 A. The independence of the structure of porous glasses, which were obtained from glass samples of "high temperature", from the acid concentration as well as from the temperature of acid etching shows that the coagulation of silicic acid in the pores does practically not take place in this case. But it takes place in the acid etching of class samples which were heat treated at 585°C. Based on the results obtained here the increase of the measurements of chemical heterogeneity domains can be regarded as a recondensation process which is the same for all temperatures below the upper opalescence limit (at about 725°C). From this point of view the difference between the porous structure of the products of the acid etching of glasses which have been heat treated

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below and above 565°C is only of subordinate character (as it is connected with the inner structure of the boronsodium domains). The investigation of the kinetics as well as of the nature of the processes taking place in Na-7/23 glass and heat treatment of this substance makes it possible to obtain porous glasses with desired structure, mono-as well as bidisperse glasses. A continuous heat treatment is very effective which makes use of the structures developed at above 585°C. A heat treatment of such a glass at below 505°C destroys quickly, during the first process, the fine silica lattice within the boronsodium domains, but these do not disappear completely. After this the domains of chemical heterogeneity develop which correspond to this low temperature. As a result of the acid etching of such a glass a porous glass with a bidisperse structure is obtained. There are 7 figures, 3 tables, and 23 references, 19 of which are Slavic.

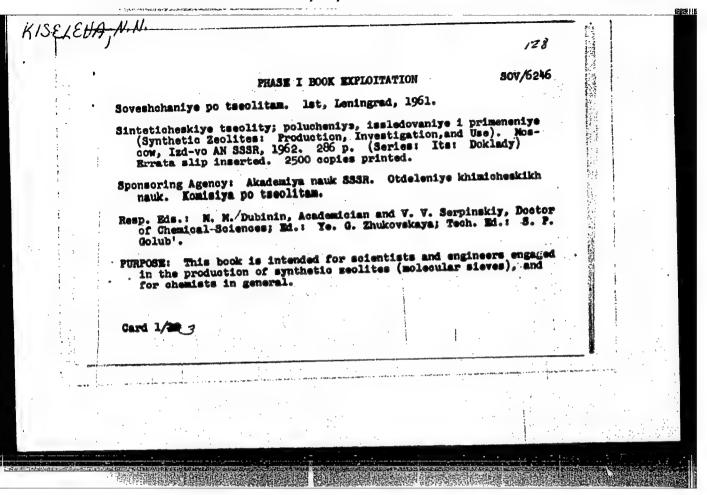
SUBMITTED:

July 9, 1956

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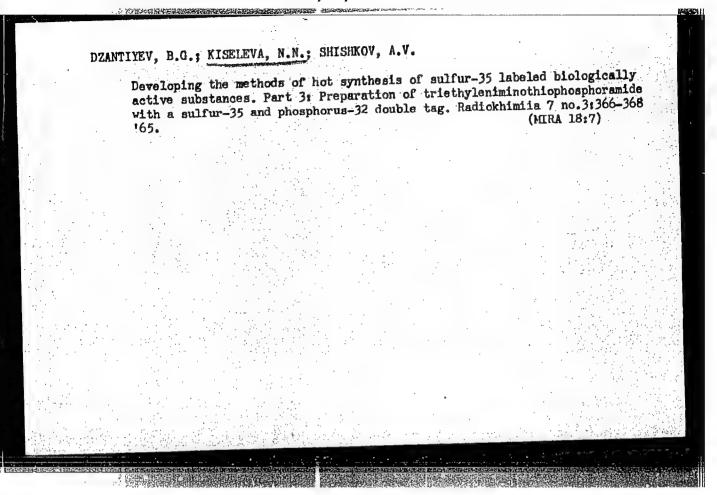
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	Synthetic Zeolites: (Cont.)	
	COVERAGE: The book is a collection of reports presented at the First Conference on Zeolites, held in Leningrad 16 through 19 March 1961 at the Leningrad Technological Institute imeni Lensovet, and is purportedly the first monograph on this subject. The reports are grouped into 3 subject areas: 1) theoretical problems of adsorption on various types of seclites and methods for their investigation, 2) the production of seclites, and 3) application of zeolites. No personalities are mentioned. References follow individual articles.	The second secon
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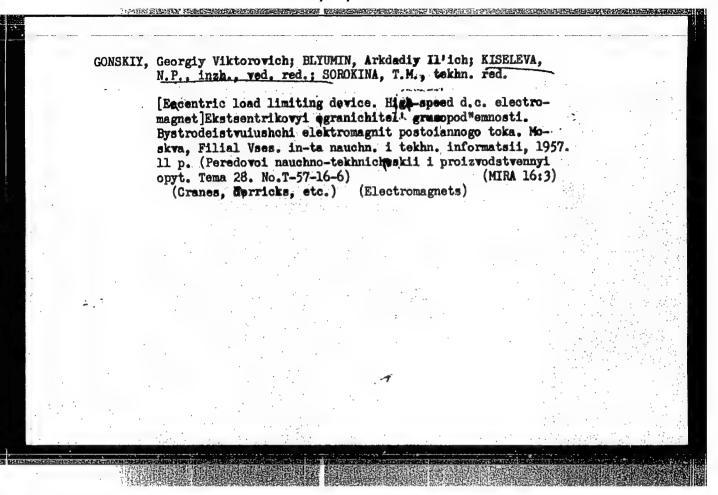
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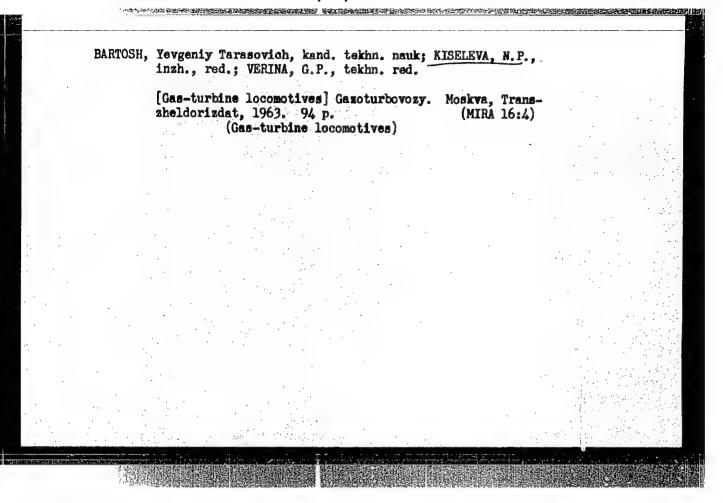
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